

Activity: Safety Data Sheets

	Concentrated Sulfuric Acid	Kovacs reagent	Potassium Permanganate (solid)	Silver Nitrate (crystalline)	Sodium Hydroxide (pellets)
Hazard classification	Corrosive to metals (Category 1), H290 Skin corrosion (Category 1A), H314 Serious eye damage (Category 1), H318	Flammable liquid 3 Substance or mixture corrosive to metals 1 Skin corrosion/irritation 1A Serious eye damage/eye irritation 1S Specific target organ toxicity - single exposure (respiratory tract irritation) 3 Specific target organ toxicity - single exposure (narcotic effects, drowsiness)	Oxidizing Solid Category 2, Acute Toxicity (Oral) Category 4, Eye Irritation Category 2A, Reproductive Toxicity Category 2, Specific target organ toxicity - repeated exposure Category 2, Chronic Aquatic Hazard Category 1	Oxidizing Solids: Category 2 Hazardous to the Aquatic Environment - Acute Hazard: Category 1 Hazardous to the Aquatic Environment - Long-Term Hazard: Category 1 Eye Damage/Irritation: Category 1 Skin Corrosion/Irritation: Category 1A Hazardous to the Aquatic Environment - Acute Hazard: Category 1	category 1), H290 Skin corrosion/irritation (Sub-category 1A), H314 Serious eye damage/eye irritation (Category 1), H318 For the full text of the H-Statements mentioned in this Section, see Section 16
Safe handling methods and PPE required	Provision of good ventilation in the working area. The floor must be acid resistant. Suitable materials: generally resistant: Glass, Enamel. At lower temperatures: Polyethylene PE, Polyvinyl chloride, Polypropylene PP. At different concentrations and range of temperatures the resistance of metals may vary greatly. Before choosing	Precautions for safe handling: Provision of sufficient ventilation. Use extractor hood (laboratory). Handle and open container with care. Clear contaminated areas thoroughly. Measures to prevent fire as well as aerosol and dust generation: Keep away from sources of ignition - No smoking. Take precautionary measures against static discharge. PPE: Eye/face protection Use safety goggles with side protection. Wear face protection. Skin protection hand protection Chemical protection gloves are suitable, which are tested according to EN 374. Check leak tightness/impermeability prior to use. • type of material Butyl caoutchouc (butyl rubber) • material thickness 0,7mm	Safe handling methods and PPE required Provision of good ventilation in the working area. The floor must be acid resistant. Suitable materials: generally resistant: Glass, Enamel. At lower temperatures: Polyethylene PE, Polyvinyl chloride, Polypropylene PP. At different concentrations and range of temperatures the resistance of metals may vary greatly. Before choosing materials of construction obtain specialized information. Unsuitable materials: non-noble metals. Do not leave container open. Avoid any contact when handling the substance. PPE required: Eye/face protection Goggles giving complete protection to eyes. Skin protection Chemical resistant apron / corrosive protective clothing, heavy duty work shoes. Handle	Safe handling methods and PPE Keep away from heat/sparks/open flames/hot surfaces. - No smoking. P220 Keep/Store away from clothing/.../combustible materials. P221 Take any precaution to avoid mixing with combustibles. P260 Do not breathe dust/fume/gas/mist/vapours/spray. P264 Wash thoroughly after handling. P273 Avoid release to the environment. The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336.	Prevention P234 Keep only in original packaging. P260 Do not breathe dust. P264 Wash skin thoroughly after handling. P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

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	materials of construction obtain specialized information. Unsuitable materials: non-noble metals. Do not leave container open. Avoid any contact when handling the substance. PPE required: Eye/face protection Goggles giving complete protection to eyes. Skin protection Chemical resistant apron / corrosive protective clothing, heavy duty work shoes. Handle with gloves - Full contact wears gloves from viton material. - Splash contact wears gloves from butyl rubber material. The select protective gloves have to satisfy the specifications of EU Directive 89/686 EEC and standard EN 374 derived from it. Respiratory protection In case of insufficient ventilation, wear suitable	• breakthrough times of the glove material > 480 minutes (permeation: level 6) Respiratory protection necessary at: Aerosol or mist formation. Type: A (against organic gases and va- pours with a boiling point of > 65 °C , colour code: Brown)	with gloves - Full contact wears gloves from viton material. - Splash contact wears gloves from butyl rubber material. The select protective gloves have to satisfy the specifications of EU Directive 89/686 EEC and standard EN 374 derived from it. Respiratory protection In case of insufficient ventilation, wear suitable respiratory equipment. Required when vapor/aerosols are generated filter Precautions for safe handling: Provision of sufficient ventilation. Use extractor hood (laboratory). Handle and open container with care. Clear contaminated areas thoroughly. Measures to prevent fire as well as aerosol and dust generation: Keep away from sources of ignition - No smoking. Take precautionary measures against static discharge. PPE: Eye/face protection Use safety goggle with side protection. Wear face protection. Skin protection hand protection Chemical protection gloves are suitable, which are tested according to EN 374. Check leaktightness/impermeability prior to use. • type of material Butyl caoutchouc (butyl rubber) • material thickness 0,7mm • breakthrough times of the glove material > 480 minutes (permeation: level 6) Respiratory protection necessary at: Aerosol or mist formation. Type: A (against organic gases and va- pours with a boiling point of > 65 °C , colour code: Brown) Safe handling methods and PPE	Wear gloves of impervious material conforming to AS/NZS 2161. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.	
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	respiratory equipment. Required when vapor/aerosols are generated filter		requiredP210 Keep away from heat/sparks/open flames/hot surfaces. – No smoking. P220 Keep/Store away from clothing/.../combustible materials. P221 Take any precaution to avoid mixing with combustibles. P260 Do not breathe dust/fume/gas/mist/vapours/spray P264 Wash thoroughly after handling.P273 Avoid release to the environment.The use of a face shield, chemical goggles or safety glasses with side shield protection as appropriate. Must comply with Australian Standards AS 1337 and be selected and used in accordance with AS 1336. Wear gloves of impervious material conforming to AS/NZS 2161. Clothing for protection against chemicals should comply with AS 3765 Clothing for Protection Against Hazardous Chemicals.		
Storage requirements	Keep tightly closed in a dry, cool and well-ventilated place. Keep out of direct sunlight and away from heat, water and incompatible materials. Requirements for containers, no metal containers.	Keep in a cool place (2 – 6 °C recommended).Incompatible substances or mixturesObserve hints for combined storage.Consideration of other advice Ground/bond container and receiving equipment. Ventilation requirements Use local and general ventilation	Store in original containers.Keep containers securely sealed as supplied.Store in a cool, well ventilated area.Keep dry.Store under cover and away from sunlight.Store away from flammable or combustible materials, debris and waste. Contact may cause fire or violent reaction. Store away from incompatible materials and foodstuff containers.DO NOT stack on wooden floors or pallets.Protect containers from physical damage.Check regularly	P405 Store locked up. Keep container tightly closed when not in use, in a cool, dry, well-ventilated area away from incompatible substances. Keep well closed and protected from light and moisture. Sensitive to light. Store at room temperature (15 to 25 °C recommended).	No metal containers. Tightly closed. Dry. Storage class. Combustible, corrosive hazardous materials

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			for leaks. Observe manufacturer's storage and handling recommendations contained within this SDS. Glass container is suitable for laboratory quantities. For small quantities of permanganate: Dissolve solid residue in water. Add a reducer (hypochlorite, a bisulfate, or a ferrous salt but not carbon, sulfur or strong reducing agent) and sulfuric acid to promote reduction. Neutralise with soda ash. Bury precipitate in an authorised landfill. Decontaminate empty containers		
Waste disposal	There are no uniform EC Regulations for the disposal of chemicals or residues. Chemical residues generally count as special waste. The disposal of the latter is regulated in the EC member countries through corresponding law and regulations. We recommend that you contact either the authorities in charge or approved waste disposal companies which will advise you on how to dispose of special waste or	This material and its container must be disposed of as hazardous waste. Dispose of contents/container in accordance with local/regional/national/international regulations. Do not empty into drains. Only packagings which are approved (e.g. acc. to the Dangerous Goods Regulations) may be used	Store in original containers. Keep containers securely sealed as supplied. Store in a cool, well ventilated area. Keep dry. Store under cover and away from sunlight. Store away from flammable or combustible materials, debris and waste. Contact may cause fire or violent reaction. Store away from incompatible materials and foodstuff containers. DO NOT stack on wooden floors or pallets. Protect containers from physical damage. Check regularly for leaks. Observe manufacturer's storage and handling recommendations contained within this SDS. Glass container is suitable for laboratory quantities. P501 Dispose of contents/container to an approved waste disposal plant. For small quantities of permanganate: Dissolve solid residue in water.	P501 Dispose of contents/container to an approved waste disposal plant.	Dispose of contents/container to an approved waste disposal plant. over drains. Collect, bind, and pump off spills. Observe possible material restrictions (see sections 7 and 10). Take up dry. Dispose of properly. Clean up affected area. Avoid generation of dusts. Waste material must be disposed of in accordance with the

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	burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations. Contaminated packaging Disposal in compliance with official regulations. Handle contaminated packaging as hazardous waste in the same way of the substance itself. If not officially specified differently, non-contaminated packaging may be treated like household waste or recycled.		Add a reducer (hypochlorite, a bisulfate, or a ferrous salt but not carbon, sulfur or strong reducing agent) and sulfuric acid to promote reduction. Neutralise with soda ash. Bury precipitate in an authorised landfill. With reducer, acid and soda ash, as above Decontaminate empty containers with reducer, acid and soda ash, as above		national and local regulations. Leave chemicals in original containers. No mixing with other waste. Handle uncleaned containers like the product itself. See www.retrologistik.com for processes regarding the return of chemicals and containers, or contact us there if you have further questions
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